AMENDMENTS TO THE CLAIMS

1. (Previously presented) A method for employing a plurality of data structure types to optimize the retrieval of at least one data object over a network, comprising:

(a) storing each data object in a data store, each data object in the data store being separately referenced in each of the plurality of data structure types;

(b) in response to a request for one data object, automatically determining one of the plurality of data structure types best suited to retrieve the one data object and employing the determined data structure type to locate and retrieve the one data object from the data store;

(c) in response to a request for a plurality of related data objects, automatically determining another one of the plurality of data structure types best suited to retrieve the plurality of related data objects and employing the determined other one of the plurality of data structure types to locate and retrieve the plurality of related data objects from the data store; and

(d) in response to a request to delete at least one data object, automatically deleting each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful.

2. (Previously Presented) The method of Claim 1, further comprising:

(a) associating a parent object with each data object, the parent object identifying each reference for the associated data object in the plurality of data structure types; and

(b) object associated with each deleted data object to identify each reference for the deleted data object in the plurality of data structure types such that each reference to the deleted data object is deleted.

3. (Original) The method of Claim 1, wherein the plurality of related data objects have at

least one related characteristic, including port, IP address and type.

4. (Currently amended) The method of Claim 1, wherein the plurality of data structure types include at least one of a List, Hash and Trie.

5. (Original) The method of Claim 4, wherein the data object is a collector object that is associated with a member object that identifies one or more other data objects that are referenced in a sub-tree below a reference to the requested collector object in the Trie data structure, the member object being employed to reference and retrieve each other data object when the collector object is retrieved.

6. (Original) The method of Claim 5, further comprising automatically enabling the member object to identify a new data object that is added to the sub-tree below the reference to the collector object.

7. (Previously Presented) The method of Claim 4, wherein the one of the plurality of data structure types is the Trie data structure, further comprising:

(a) identifying a key in the request for the data object;

(b) dividing the key into segments; and

(c) employing each segment to search the Trie data structure and locate the requested data object.

8. (Original) The method of Claim 7, wherein the key represents an IP address.

9. (Original) The method of Claim 7, wherein the key represents a port.

10. (Original) The method of Claim 7, wherein each segment is represented by at least one bit.

11. (Original) The method of Claim 1, wherein the data store is a database having a type that includes relational, object-oriented or a combination of relational and object oriented.

12. (Original) The method of Claim 1, wherein the data object is a container.

13. (Original) The method of Claim 11, wherein the data store is a data warehouse.

14. (Previously Presented) In a client-server operating environment, a method for employing a plurality of data structure types to optimize the retrieval of at least one data object over a network for any one of a plurality of applications running in the client-server operating environment, comprising the acts of:

(a) enabling a server to store each data object in a data store, each data object in the data store being separately referenced in each of the plurality of data structures;

(b) when one data object is requested by a client, enabling the server to automatically choose one of the plurality of data structure types best suited to fulfill the request and retrieve the one data object for the client;

(c) when a plurality of related data objects are requested by the client, enabling the server to automatically choose another one of the plurality of data structure types best suited to locate and retrieve the plurality of related data objects for the client; and

(d) in response to a request to delete at least one data object from the client, enabling the server to automatically delete each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful.

15. (Previously Presented) The method of Claim 14, further comprising the actions of:

(a) enabling the server to associate a parent object with each data object, the parent object identifying each reference for the associated data object in the plurality of data structure types; and

(b) when at least one data object is deleted, enabling the server to employ each parent object associated with each deleted data object to identify each reference for the deleted data object in the

plurality of data structure types such that each reference to the deleted data object is deleted.

16. (Previously Presented) The method of Claim 14, wherein the one of the plurality of data structure types is a Trie data structure, further comprising:

(a) enabling the server to identify a key in the request for the data object;

(b) enabling the server to divide the key into segments; and

(c) enabling the server to employ each segment to search the trie data structure and locate the requested data object.

17. (Previously Presented) In a server array controller operating environment, a method for employing a plurality of data structure types to optimize the retrieval of at least one data object over a network for any one of a plurality of applications running in the client-server operating environment, comprising the acts of:

(a) enabling a server array controller to store each data object in a data store, each data object in the data store being separately referenced in each of the plurality of data structure types;

(b) when one data object is requested by a network device, enabling the server array controller to automatically choose one of the plurality of data structure types best suited to fulfill the request and retrieve the location of the one data object on at least one server;

(c) when a plurality of related data objects are requested by the network device, enabling the server array controller to automatically choose another one of the plurality of data structure types best suited to retrieve the location of the plurality of related data objects on at least one server; and

(d) in response to a request to delete at least one data object by the network device, enabling the server array controller to automatically delete each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be

unsuccessful.

18. (Previously Presented) The method of Claim 17, further comprising the actions of:

(a) enabling the server array controller to associate a parent object with each data object, the parent object identifying each reference for the associated data object in the plurality of data structure types; and

(b) when at least one data object is deleted, enabling the server array controller to employ each parent object associated with each deleted data object to identify each reference for the deleted data object in the plurality of data structure types such that each reference to the deleted data object is deleted.

19. (Currently amended) The method of Claim 17, wherein the plurality of data structure types includes at least one of a Trie, Hash and List.

20. (Previously Presented) The method of Claim 17, wherein the network device includes, router, client, cache, firewall and another server array controller.

21. (Previously Presented) A computer readable medium readable by a computing system and encoding a computer program of instructions for executing a computer process for employing a plurality of data structure types to optimize the retrieval of data over a network for an application on the computing system, comprising the actions of

(a) storing each data object in a data store, each data object in the data store being separately referenced in each of the plurality of data structure types;

(b) when one data object is requested, automatically determining one of the plurality of data structure types best suited to retrieve the one data object and employing the determined data structure to locate and retrieve the one data object from the data store;

(c) when a plurality of data objects are requested, automatically determining another one of

the plurality of data structure types best suited to retrieve the plurality of related data objects and employing the determined other one of the plurality of data structure types to locate and retrieve the plurality of related data objects from the data store; and

(d) in response to a request to delete at least one data object, automatically deleting each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful.

22. (Previously Presented) A modulated data signal having computer executable instructions embodied thereon for employing a plurality of data structure types to optimize the retrieval of data objects over the Internet, comprising

(a) a transmitter for sending a request for one data object from a data store, each data object in the data store being separately referenced in each of the plurality of data structure types;

(b) a receiver for receiving the request and enabling the automatic determination of one of the plurality of data structure types best suited to locate and retrieve the one data object;

(c) another transmitter for sending another request for a plurality of related data objects from the data store;

(d) another receiver for receiving the other request and enabling the automatic determination of another one of the plurality of data structure types best suited to locate and retrieve the plurality of related data objects; and

(e) a transcoder for receiving a deletion request for at least one data object and enabling the automatic deletion of each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful.

23. (Previously presented) A method for employing a plurality of data structure types to

optimize the retrieval of at least one data object over a network, comprising:

(a) storing each data object in a data store, each data object in the data store being separately referenced in each of the plurality of data structure types;

(b) in response to a request for at least one data object, automatically determining one of the plurality of data structure types best suited to retrieve the at least one data object based, in part, on a characteristic of the requested at least one data object and employing the determined data structure type to locate and retrieve the at least one data object from the data store; and

(c) in response to a request to delete at least one data object, automatically deleting each reference to each deleted data object in the plurality of data structure types such that each subsequent request for each deleted data object will be unsuccessful.

24. (Previously presented) The method of claim 23, further comprising:

if the at least one data object comprises a plurality of data objects, automatically determining one of the plurality of data structure types based, in part, on a relationship between each of the plurality of data objects.

25. (Previously presented) The method of claim 23, wherein automatically determining one of the plurality of data structure types is based, in part, on a number of data objects in the at least one data object.

26. (New) A method for retrieving at least one data object associated with a network connection, comprising:

(a) storing each data object in a data store, each data object in the data store being separately referenced in each of a plurality of data structure types;

(b) in response to a request for one data object associated with the network connection,

automatically determining one of the plurality of data structure types best suited to retrieve the one data object and employing the determined data structure type to locate and retrieve the one data object from the data store; and

(c) in response to a request for a plurality of related data objects having at least one related characteristic including a port number and an IP address, automatically determining another one of the plurality of data structure types best suited to retrieve the plurality of related data objects and employing the determined other one of the plurality of data structure types to locate and retrieve the plurality of related data objects from the data store.

27. (New) The method of Claim 26, wherein the plurality of data structure types includes at least one of a Trie, Hash and List.